

# SEQUENCE LISTING

<110> Hu, Yi  
Nepomnichy, Boris  
Wang, Xiaoming  
Donoho, Gregory  
Scoville, John  
Walke, D. Wade

<120> Novel Human Kinase Proteins and Polynucleotides Encoding the Same

<130> LEX-0167-USA

<150> US 60/199,499

<151> 2000-04-25

<150> US 60/201,227

<151> 2000-05-01

<160> 12

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 1545

<212> DNA

<213> homo sapiens

<400> 1

atggctgata	gtggcttaga	taaaaaatcc	acaaaatgcc	ccgactgttc	atctgcttct	60
cagaaagatg	tactttgtgt	atgttccagc	aaaacaaggg	ttcctccagt	tttggtggtg	120
gaaatgtcac	agacatcaag	cattggtagt	gcagaatctt	taatttcact	ggagagaaaa	180
aaagaaaaaa	atatcaacag	agatataacc	tccaggaaaag	atttgccctc	aagaacctca	240
aatgtagaga	gaaaagcatc	tcagcaacaa	tggggtcggg	gcaactttac	agaaggaaaa	300
gttcctcaca	taaggattga	gaatggagct	gctattgagg	aaatctatac	ctttggaaga	360
atattgggaa	aaggagagctt	tgggaatagtc	attgaagcga	cagacaagga	aacagaaaacg	420
aagtgggcaa	ttaaaaaagt	gaacaaaagaa	aaggctggaa	gctctgctgt	gaagttactt	480
gaacgagagg	tgaacattct	gaaaagtgtga	aaacatgaac	acatcataca	tctggaacaa	540
gtatttgaaa	cgccaaagaa	aatgtacctt	gtgatggagc	tttgtgagga	tggagaactc	600
aaagaaattc	tggataggaa	agggcatttc	tcagagaatg	agacaagggtg	gatcattcaa	660
agtctcgcat	cagctatagc	atatcttcac	aataatgata	ttgtacatag	agatctgaaa	720
ctggaaaata	taatgggttaa	aagcagtcct	attgatgata	acaatgaaat	aaacttaaac	780
ataaagggtga	ctgatttttg	cttagcgggtg	aagaagcaaa	gtaggagtgga	agccatgctg	840
caggccacat	gtgggactcc	tatctatatg	gcccctgaag	ttatcagtgc	ccacgactat	900
agccagcagt	gtgacatttg	gagcataggc	gtcgtaatgt	acatgttatt	acgtggagaa	960
ccaccctttt	tggcaagctc	agaagagaag	ctttttgagt	taataagaaa	aggagaacta	1020
cattttgaaa	atgcagtcctg	gaattccata	agtgactgtg	ctaaaagtgt	tttgaaacaa	1080
cttatgaaag	tagatcctgc	tcacagaatc	acagctaagg	aactactaga	taaccagtgg	1140
ttaacaggca	ataaactttc	ttcgggtgaga	ccaaccaatg	tattagagat	gatgaaggaa	1200
tggaaaaata	acccagaaaag	tgttgaggaa	aacacaacag	aagagaagaa	taagccgtcc	1260
actgaagaaa	agttgaaaag	ttaccaaccc	tggggaaatg	tccctgatgc	caattacact	1320
tcagatgaag	aggaggaaaa	acagtctact	gcttatgaaa	agcaatttcc	tgcaaccagt	1380
aaggacaact	ttgatatgtg	cagttcaagt	ttcacatcta	gcaaactcct	tccagctgaa	1440
atcaagggag	aaatggagaa	aacccctgtg	actccaagcc	aaggaacagc	aaccaagtac	1500
cctgctaaat	ccggcgccct	gtccagaacc	aaaaagaaac	tctaa		1545

<210> 2

<211> 514

<212> PRT

<213> homo sapiens

<400> 2

Met	Ala	Asp	Ser	Gly	Leu	Asp	Lys	Lys	Ser	Thr	Lys	Cys	Pro	Asp	Cys
1				5					10					15	
Ser	Ser	Ala	Ser	Gln	Lys	Asp	Val	Leu	Cys	Val	Cys	Ser	Ser	Lys	Thr
		20						25					30		
Arg	Val	Pro	Pro	Val	Leu	Val	Val	Glu	Met	Ser	Gln	Thr	Ser	Ser	Ile
		35					40					45			
Gly	Ser	Ala	Glu	Ser	Leu	Ile	Ser	Leu	Glu	Arg	Lys	Lys	Glu	Lys	Asn
	50				55						60				
Ile	Asn	Arg	Asp	Ile	Thr	Ser	Arg	Lys	Asp	Leu	Pro	Ser	Arg	Thr	Ser
65				70						75					80
Asn	Val	Glu	Arg	Lys	Ala	Ser	Gln	Gln	Gln	Trp	Gly	Arg	Gly	Asn	Phe
				85					90					95	
Thr	Glu	Gly	Lys	Val	Pro	His	Ile	Arg	Ile	Glu	Asn	Gly	Ala	Ala	Ile
			100					105					110		
Glu	Glu	Ile	Tyr	Thr	Phe	Gly	Arg	Ile	Leu	Gly	Lys	Gly	Ser	Phe	Gly
		115					120					125			
Ile	Val	Ile	Glu	Ala	Thr	Asp	Lys	Glu	Thr	Glu	Thr	Lys	Trp	Ala	Ile
	130					135					140				
Lys	Lys	Val	Asn	Lys	Glu	Lys	Ala	Gly	Ser	Ser	Ala	Val	Lys	Leu	Leu
145					150					155					160
Glu	Arg	Glu	Val	Asn	Ile	Leu	Lys	Ser	Val	Lys	His	Glu	His	Ile	Ile
				165					170					175	
His	Leu	Glu	Gln	Val	Phe	Glu	Thr	Pro	Lys	Lys	Met	Tyr	Leu	Val	Met
			180					185					190		
Glu	Leu	Cys	Glu	Asp	Gly	Glu	Leu	Lys	Glu	Ile	Leu	Asp	Arg	Lys	Gly
		195					200					205			
His	Phe	Ser	Glu	Asn	Glu	Thr	Arg	Trp	Ile	Ile	Gln	Ser	Leu	Ala	Ser
	210					215					220				
Ala	Ile	Ala	Tyr	Leu	His	Asn	Asn	Asp	Ile	Val	His	Arg	Asp	Leu	Lys
225				230						235					240
Leu	Glu	Asn	Ile	Met	Val	Lys	Ser	Ser	Leu	Ile	Asp	Asp	Asn	Asn	Glu
				245					250					255	
Ile	Asn	Leu	Asn	Ile	Lys	Val	Thr	Asp	Phe	Gly	Leu	Ala	Val	Lys	Lys
		260						265					270		
Gln	Ser	Arg	Ser	Glu	Ala	Met	Leu	Gln	Ala	Thr	Cys	Gly	Thr	Pro	Ile
		275					280					285			
Tyr	Met	Ala	Pro	Glu	Val	Ile	Ser	Ala	His	Asp	Tyr	Ser	Gln	Gln	Cys
	290					295					300				
Asp	Ile	Trp	Ser	Ile	Gly	Val	Val	Met	Tyr	Met	Leu	Leu	Arg	Gly	Glu
305				310						315					320
Pro	Pro	Phe	Leu	Ala	Ser	Ser	Glu	Glu	Lys	Leu	Phe	Glu	Leu	Ile	Arg
				325					330					335	
Lys	Gly	Glu	Leu	His	Phe	Glu	Asn	Ala	Val	Trp	Asn	Ser	Ile	Ser	Asp
			340					345					350		
Cys	Ala	Lys	Ser	Val	Leu	Lys	Gln	Leu	Met	Lys	Val	Asp	Pro	Ala	His
		355					360					365			
Arg	Ile	Thr	Ala	Lys	Glu	Leu	Leu	Asp	Asn	Gln	Trp	Leu	Thr	Gly	Asn
	370					375						380			
Lys	Leu	Ser	Ser	Val	Arg	Pro	Thr	Asn	Val	Leu	Glu	Met	Met	Lys	Glu
385				390						395					400
Trp	Lys	Asn	Asn	Pro	Glu	Ser	Val	Glu	Glu	Asn	Thr	Thr	Glu	Glu	Lys
				405					410					415	
Asn	Lys	Pro	Ser	Thr	Glu	Glu	Lys	Leu	Lys	Ser	Tyr	Gln	Pro	Trp	Gly
		420						425					430		
Asn	Val	Pro	Asp	Ala	Asn	Tyr	Thr	Ser	Asp	Glu	Glu	Glu	Glu	Lys	Gln
		435					440					445			
Ser	Thr	Ala	Tyr	Glu	Lys	Gln	Phe	Pro	Ala	Thr	Ser	Lys	Asp	Asn	Phe
	450					455					460				
Asp	Met	Cys	Ser	Ser	Ser	Phe	Thr	Ser	Ser	Lys	Leu	Leu	Pro	Ala	Glu
465				470						475					480
Ile	Lys	Gly	Glu	Met	Glu	Lys	Thr	Pro	Val	Thr	Pro	Ser	Gln	Gly	Thr
				485					490					495	
Ala	Thr	Lys	Tyr	Pro	Ala	Lys	Ser	Gly	Ala	Leu	Ser	Arg	Thr	Lys	Lys

Lys Leu

500

505

510

<210> 3  
<211> 2001  
<212> DNA  
<213> homo sapiens

<400> 3  
gataaacggt acataactag aaagtggcag agctgtcagc tgtgaatatg tgtctagtgc 60  
atccttaacc tgaggacttc accagttcga aattacagtt ttcacatca actaccttat 120  
cctttttggt ctggttttct tctcaaaca gtggaaacat ttttaaagtt gcttttgttg 180  
cagagttaaa caaatggctg atagtggctt agataaaaaa tccacaaaat gccccgactg 240  
ttcatctgct tctcagaaaag atgtactttg tgtatgttcc agcaaaaaca ggggttcctcc 300  
agttttggtg gtggaaatgt cacagacatc aagcattggt agtgcagaat ctttaatttc 360  
actggagaga aaaaaagaaa aaaatatcaa cagagatata acctccagga aagatttgcc 420  
ctcaagaacc tcaaattgtag agagaaaagc atctcagcaa caatggggtc ggggcaactt 480  
tacagaagga aaagttcctc acataaggat tgagaatgga gctgctattg aggaaatcta 540  
tacctttgga agaataattg gaaaaggag ctttggataa gtcattgaag cgacagacaa 600  
ggaaacagaa acgaagtggg caattaaaaa agtgaacaaa gaaaaggctg gaagctctgc 660  
tgtgaagtta cttgaacgag aggtgaacat tctgaaaagt gtaaaacatg aacacatcat 720  
acatctggaa caagtatttg aaacgccaaa gaaaatgtac cttgtgatgg agctttgtga 780  
ggatggagaa ctcaaagaaa ttctggatag gaaagggcat ttctcagaga atgagacaag 840  
gtggatcatt caaagtctcg catcagctat agcatatctt cacaataatg atattgtaca 900  
tagagatctg aaactggaaa atataatggt taaaagcagt cttattgatg ataacaatga 960  
aataaactta aacataaagg tgactgattt tggcttagcg gtgaagaagc aaagtaggag 1020  
tgaagccatg ctgcaggcca catgtgggac tctatctat atggcccctg aagttatcag 1080  
tgcccacgac tatagccagc agtgtgacat ttggagcata ggcgtcgtaa tgtacatggt 1140  
attacgtgga gaaccaccct ttttggcaag ctcaagaag aagctttttg agttaataag 1200  
aaaaggagaa ctacattttg aaaatgcagt ctggaattcc ataagtgact gtgctaaaag 1260  
tgttttgaag caacttatga aagtagatcc tgctcacaga atcacagcta aggaactact 1320  
agataaccag tggttaacag gcaataaaact ttcttcggtg agaccaacca atgtattaga 1380  
gatgatgaag gaatggaaaa ataaccaga aagtgttgag gaaaacacaa cagaagagaa 1440  
gaataagccg tccactgaag aaaagttgaa aagttaccaa ccctgggggaa atgtccctga 1500  
tgccaattac acttcagatg aagaggagga aaaacagtct actgcttatg aaaagcaatt 1560  
tcttgcaacc agtaaggaca actttgatat gtgcagttca agtttcacat ctagcaaact 1620  
ccttccagct gaaatcaagg gagaaatgga gaaaaccctt gtgactccaa gccaaaggaa 1680  
agcaaccaag taccctgcta aatccggcgc cctgtccaga accaaaaaga aactctaagg 1740  
ttccctccag tgttggacag tacaaaaaca aagctgctct tgttagcact ttgatgaggg 1800  
ggtaggaggg gaagaagaca gccctatgct gagctttagt ccttttagct ccacagagcc 1860  
ccgccatgtg tttgcaccag cttaaaattg aagctgctta tctccaaagc agcataagct 1920  
gcacatggca ttaaaggaca gccaccagta ggcttggcag tgggctgcag tggaaatcaa 1980  
ctcaagatgt acacgaaggt t 2001

<210> 4  
<211> 678  
<212> DNA  
<213> homo sapiens

<400> 4  
atgggagcca acacttcaag aaaaccacca gtgtttgatg aaaatgaaga tgtcaacttt 60  
gaccactttg aaatttttgc agccattggg aaaggcagtt ttgggaaggt ctgcattgta 120  
cagaagaatg ataccaagaa gatgtacgca atgaagtaca tgaataaaca aaagtgcgtg 180  
gagcgcaatg aagtgagaaa tgtcttcaag gaactccaga tcatgcaggg tctggagcac 240  
cctttccttg ttaattttgt gtattccttc caagatgagg aagacatggt catggtggtg 300  
gacctcctgc tgggtggaga cctgcgttat cacctgcaac agaacgtcca cttcaaggaa 360  
gaaacagtga agctcttcat ctgtgagctg gtcattggcc tggactacct gcagaaccag 420  
cgcacattc acagggatat gaagcctgac aatattttac ttgacgaaca tgggcacgtg 480  
cacatcacag atttcaacat tgctgcgatg atgcccagg agacacagat taccaccatg 540  
gctggcacca agccttcat ggcacctgag atgttcagct ccagaaaagg agcaggctat 600

tcctttgctg ttgactgggtg gtccctggga gtgacggcat atgaactgct gagaggccgg  
gtggcccaga aacagtag

660  
678

<210> 5  
<211> 225  
<212> PRT  
<213> homo sapiens

<400> 5  
Met Gly Ala Asn Thr Ser Arg Lys Pro Pro Val Phe Asp Glu Asn Glu  
1 5 10 15  
Asp Val Asn Phe Asp His Phe Glu Ile Leu Arg Ala Ile Gly Lys Gly  
20 25 30  
Ser Phe Gly Lys Val Cys Ile Val Gln Lys Asn Asp Thr Lys Lys Met  
35 40 45  
Tyr Ala Met Lys Tyr Met Asn Lys Gln Lys Cys Val Glu Arg Asn Glu  
50 55 60  
Val Arg Asn Val Phe Lys Glu Leu Gln Ile Met Gln Gly Leu Glu His  
65 70 75 80  
Pro Phe Leu Val Asn Leu Trp Tyr Ser Phe Gln Asp Glu Glu Asp Met  
85 90 95  
Phe Met Val Val Asp Leu Leu Leu Gly Gly Asp Leu Arg Tyr His Leu  
100 105 110  
Gln Gln Asn Val His Phe Lys Glu Thr Val Lys Leu Phe Ile Cys  
115 120 125  
Glu Leu Val Met Ala Leu Asp Tyr Leu Gln Asn Gln Arg Ile Ile His  
130 135 140  
Arg Asp Met Lys Pro Asp Asn Ile Leu Leu Asp Glu His Gly His Val  
145 150 155 160  
His Ile Thr Asp Phe Asn Ile Ala Ala Met Leu Pro Arg Glu Thr Gln  
165 170 175  
Ile Thr Thr Met Ala Gly Thr Lys Pro Tyr Met Ala Pro Glu Met Phe  
180 185 190  
Ser Ser Arg Lys Gly Ala Gly Tyr Ser Phe Ala Val Asp Trp Trp Ser  
195 200 205  
Leu Gly Val Thr Ala Tyr Glu Leu Leu Arg Gly Arg Val Ala Gln Lys  
210 215 220  
Gln  
225

<210> 6  
<211> 711  
<212> DNA  
<213> homo sapiens

<400> 6  
atgggagcca acacttcaag aaaaccacca gtgtttgatg aaaatgaaga tgtcaacttt 60  
gaccactttg aaatttttgcg agccattggg aaaggcagtt ttgggaaggt ctgcattgta 120  
cagaagaatg ataccaagaa gatgtacgca atgaagtaca tgaataaaca aaagtgcgtg 180  
gagcgcaatg aagtgagaaa tgtcttcaag gaactccaga tcatgcaggg tctggagcac 240  
ccttttctgg ttaattttgtg gtatttccttc caagatgagg aagacatgtt catggtgggtg 300  
gacctctgc tgggtggaga cctgcgttat cacctgcaac agaacgtcca cttcaaggaa 360  
gaaacagtga agctcttcat ctgtgagctg gtcatggccc tggactacct gcagaaccag 420  
cgcatcattc acagggatat gaagcctgac aatattttac ttgacgaaca tgggcacgtg 480  
cacatcacag atttcaacat tgctgcgatg ctgcccaggg agacacagat taccaccatg 540  
gctggcacca agccttacat ggcacctgag atgttcagct ccagaaaagg agcaggctat 600  
tcctttgctg ttgactgggtg gtccctggga gtgacggcat atgaactgct gagaggccgg 660  
actgtagtag catttcctct ttggttattt ttccagcaag ttctatttta g 711

<210> 7  
<211> 236  
<212> PRT  
<213> homo sapiens

<400> 7

Met Gly Ala Asn Thr Ser Arg Lys Pro Pro Val Phe Asp Glu Asn Glu  
1 5 10 15  
Asp Val Asn Phe Asp His Phe Glu Ile Leu Arg Ala Ile Gly Lys Gly  
20 25 30  
Ser Phe Gly Lys Val Cys Ile Val Gln Lys Asn Asp Thr Lys Lys Met  
35 40 45  
Tyr Ala Met Lys Tyr Met Asn Lys Gln Lys Cys Val Glu Arg Asn Glu  
50 55 60  
Val Arg Asn Val Phe Lys Glu Leu Gln Ile Met Gln Gly Leu Glu His  
65 70 75 80  
Pro Phe Leu Val Asn Leu Trp Tyr Ser Phe Gln Asp Glu Glu Asp Met  
85 90 95  
Phe Met Val Val Asp Leu Leu Leu Gly Gly Asp Leu Arg Tyr His Leu  
100 105 110  
Gln Gln Asn Val His Phe Lys Glu Thr Val Lys Leu Phe Ile Cys  
115 120 125  
Glu Leu Val Met Ala Leu Asp Tyr Leu Gln Asn Gln Arg Ile Ile His  
130 135 140  
Arg Asp Met Lys Pro Asp Asn Ile Leu Leu Asp Glu His Gly His Val  
145 150 155 160  
His Ile Thr Asp Phe Asn Ile Ala Ala Met Leu Pro Arg Glu Thr Gln  
165 170 175  
Ile Thr Thr Met Ala Gly Thr Lys Pro Tyr Met Ala Pro Glu Met Phe  
180 185 190  
Ser Ser Arg Lys Gly Ala Gly Tyr Ser Phe Ala Val Asp Trp Trp Ser  
195 200 205  
Leu Gly Val Thr Ala Tyr Glu Leu Leu Arg Gly Arg Thr Val Val Ala  
210 215 220  
Phe Pro Leu Trp Leu Phe Phe Gln Gln Val Leu Phe  
225 230 235

<210> 8

<211> 1224

<212> DNA

<213> homo sapiens

<400> 8

atgggagcca	acacttcaag	aaaaccacca	gtgtttgatg	aaaatgaaga	tgtcaacttt	60
gaccattttg	aaattttgcg	agccattggg	aaaggcagtt	ttgggaaggt	ctgcattgta	120
cagaagaatg	ataccaagaa	gatgtacgca	atgaagtaca	tgaataaaca	aaagtgcgtg	180
gagcgcaatg	aagtgagaaa	tgtcttcaag	gaactccaga	tcatgcaggg	tctggagcac	240
cctttcctgg	ttaatttggtg	gtattccttc	caagatgagg	aagacatggt	catggtggtg	300
gacctcctgc	tgggtggaga	cctgcggtat	cacctgcaac	agaacgtcca	cttcaaggaa	360
gaaacagtga	agctcttcat	ctgtgagctg	gtcatggccc	tggactacct	gcagaaccag	420
cgcattcattc	acagggatat	gaagcctgac	aatattttac	ttgacgaaca	tgggcacgtg	480
cacatcacag	atttcaacat	tgctgcgatg	ctgcccaggg	agacacagat	taccaccatg	540
gctggcacca	agccttacat	ggcacctgag	atgttcagct	ccagaaaagg	agcaggctat	600
tccttttgctg	ttgactgggtg	gtccctggga	gtgacggcat	atgaactgct	gagaggccgg	660
agaccgtatc	atattcgctc	cagtacttcc	agcaaggaaa	ttgtacacac	gtttgagacg	720
actgttgtaa	cttacccttc	tgctgggtca	caggaaatgg	tgtcacttct	taaaaagcta	780
ctcgaaccta	atccagacca	acgattttct	cagttatctg	atgtccagaa	cttcccgtat	840
atgaatgata	taaactggga	tgcagttttt	cagaagaggc	tcattccagg	tttcatttct	900
aataaaggca	ggctgaattg	tgatcctacc	tttgaacttg	aggaaatgat	tttggagtcc	960
aaacctctac	ataagaaaaa	aaagcgtctg	gcaaagaagg	agaaggatat	gaggaaatgc	1020
gattcttctc	agacatgtct	tcttcaagag	caccttgact	ctgtccagaa	ggagttcata	1080
attttcaaca	gagaaaaagt	aaacagggac	tttaacaaaa	gacaaccaaa	tctagccttg	1140
gaacaaacca	aagaccaca	agtgacaaat	ggacaaatgg	acacaggact	cagtgcagact	1200
tttcagacct	cgaaagtttc	ataa				1224

<210> 9

<211> 407

<212> PRT

<213> homo sapiens

<400> 9

Met Gly Ala Asn Thr Ser Arg Lys Pro Pro Val Phe Asp Glu Asn Glu  
1 5 10 15  
Asp Val Asn Phe Asp His Phe Glu Ile Leu Arg Ala Ile Gly Lys Gly  
20 25 30  
Ser Phe Gly Lys Val Cys Ile Val Gln Lys Asn Asp Thr Lys Lys Met  
35 40 45  
Tyr Ala Met Lys Tyr Met Asn Lys Gln Lys Cys Val Glu Arg Asn Glu  
50 55 60  
Val Arg Asn Val Phe Lys Glu Leu Gln Ile Met Gln Gly Leu Glu His  
65 70 75 80  
Pro Phe Leu Val Asn Leu Trp Tyr Ser Phe Gln Asp Glu Glu Asp Met  
85 90 95  
Phe Met Val Val Asp Leu Leu Leu Gly Gly Asp Leu Arg Tyr His Leu  
100 105 110  
Gln Gln Asn Val His Phe Lys Glu Thr Val Lys Leu Phe Ile Cys  
115 120 125  
Glu Leu Val Met Ala Leu Asp Tyr Leu Gln Asn Gln Arg Ile Ile His  
130 135 140  
Arg Asp Met Lys Pro Asp Asn Ile Leu Leu Asp Glu His Gly His Val  
145 150 155 160  
His Ile Thr Asp Phe Asn Ile Ala Ala Met Leu Pro Arg Glu Thr Gln  
165 170 175  
Ile Thr Thr Met Ala Gly Thr Lys Pro Tyr Met Ala Pro Glu Met Phe  
180 185 190  
Ser Ser Arg Lys Gly Ala Gly Tyr Ser Phe Ala Val Asp Trp Trp Ser  
195 200 205  
Leu Gly Val Thr Ala Tyr Glu Leu Leu Arg Gly Arg Arg Pro Tyr His  
210 215 220  
Ile Arg Ser Ser Thr Ser Ser Lys Glu Ile Val His Thr Phe Glu Thr  
225 230 235 240  
Thr Val Val Thr Tyr Pro Ser Ala Trp Ser Gln Glu Met Val Ser Leu  
245 250 255  
Leu Lys Lys Leu Leu Glu Pro Asn Pro Asp Gln Arg Phe Ser Gln Leu  
260 265 270  
Ser Asp Val Gln Asn Phe Pro Tyr Met Asn Asp Ile Asn Trp Asp Ala  
275 280 285  
Val Phe Gln Lys Arg Leu Ile Pro Gly Phe Ile Pro Asn Lys Gly Arg  
290 295 300  
Leu Asn Cys Asp Pro Thr Phe Glu Leu Glu Glu Met Ile Leu Glu Ser  
305 310 315 320  
Lys Pro Leu His Lys Lys Lys Arg Leu Ala Lys Lys Glu Lys Asp  
325 330 335  
Met Arg Lys Cys Asp Ser Ser Gln Thr Cys Leu Leu Gln Glu His Leu  
340 345 350  
Asp Ser Val Gln Lys Glu Phe Ile Ile Phe Asn Arg Glu Lys Val Asn  
355 360 365  
Arg Asp Phe Asn Lys Arg Gln Pro Asn Leu Ala Leu Glu Gln Thr Lys  
370 375 380  
Asp Pro Gln Val Thr Asn Gly Gln Met Asp Thr Gly Leu Ser Glu Thr  
385 390 395 400  
Phe Gln Thr Ser Lys Val Ser  
405

<210> 10

<211> 1191

<212> DNA

<213> homo sapiens

<400> 10

atgggagcca acacttcaag aaaaccacca gtgtttgatg aaaatgaaga tgtcaacttt

60

gaccactttg	aaatthttg	agccattggg	aaaggcagtt	ttgggaaggt	ctgcattgta	120
cagaagaatg	ataccaagaa	gatgtacgca	atgaagtaca	tgaataaaca	aaagtgcgtg	180
gagcgcaatg	aagtgagaaa	tgtcttcaag	gaactccaga	tcatgcaggg	tctggagcac	240
cctttcctgg	ttaatthttg	gtattccttc	caagatgagg	aagacatggt	catggtggtg	300
gacctcctgc	tgggtggaga	cctgcgttat	cacctgcaac	agaacgtcca	cttcaaggaa	360
gaaacagtga	agctcttcat	ctgtgagctg	gtcatggccc	tggactacct	gcagaaccag	420
cgcatcattc	acagggatat	gaagcctgac	aatatthttac	ttgacgaaca	tgggcacgtg	480
cacatcacag	atttcaacat	tgctgcgatg	ctgcccaggg	agacacagat	taccaccatg	540
gctggcacca	agccttacat	ggcacctgag	atgttcagct	ccagaaaagg	agcaggctat	600
tcctttgctg	ttgactgggtg	gtccctggga	gtgacggcat	atgaactgct	gagaggccgg	660
agaccgtatc	atattcgctc	cagtacttcc	agcaaggaaa	ttgtacacac	gtttgagacg	720
actgttgtaa	cttacccttc	tgctgggtca	caggaaatgg	tgtcacttct	taaaaagcta	780
ctcgaaccta	atccagacca	acgattttct	cagttatctg	atgtccagaa	cttcccgtat	840
atgaatgata	taaactggga	tgcatgtttt	cagaagaggc	tcattccagg	tttcattcct	900
aataaaggca	ggctgaattg	tgatcctacc	tttgaacttg	aggaaatgat	tttggagtcc	960
aaacctctac	ataagaaaaa	aaagcgtctg	gcaaagaagg	agaaggatat	gaggaaatgc	1020
gattcttctc	agacatgtct	tcttcaagag	caccttgact	ctgtccagaa	ggagttcata	1080
attttcaaca	gagaaaaagt	aaacagggac	tttaacaaaa	gacaaccaa	tctagccttg	1140
gaacaaacca	aagaccaca	aggtgaggat	ggtcagaata	acaacttgta	a	1191

<210> 11

<211> 396

<212> PRT

<213> homo sapiens

<400> 11

Met	Gly	Ala	Asn	Thr	Ser	Arg	Lys	Pro	Pro	Val	Phe	Asp	Glu	Asn	Glu
1				5					10					15	
Asp	Val	Asn	Phe	Asp	His	Phe	Glu	Ile	Leu	Arg	Ala	Ile	Gly	Lys	Gly
			20					25					30		
Ser	Phe	Gly	Lys	Val	Cys	Ile	Val	Gln	Lys	Asn	Asp	Thr	Lys	Lys	Met
		35					40					45			
Tyr	Ala	Met	Lys	Tyr	Met	Asn	Lys	Gln	Lys	Cys	Val	Glu	Arg	Asn	Glu
	50					55					60				
Val	Arg	Asn	Val	Phe	Lys	Glu	Leu	Gln	Ile	Met	Gln	Gly	Leu	Glu	His
65					70					75					80
Pro	Phe	Leu	Val	Asn	Leu	Trp	Tyr	Ser	Phe	Gln	Asp	Glu	Glu	Asp	Met
				85					90					95	
Phe	Met	Val	Val	Asp	Leu	Leu	Leu	Gly	Asp	Leu	Arg	Tyr	His	Leu	
			100					105					110		
Gln	Gln	Asn	Val	His	Phe	Lys	Glu	Glu	Thr	Val	Lys	Leu	Phe	Ile	Cys
		115					120					125			
Glu	Leu	Val	Met	Ala	Leu	Asp	Tyr	Leu	Gln	Asn	Gln	Arg	Ile	Ile	His
	130					135					140				
Arg	Asp	Met	Lys	Pro	Asp	Asn	Ile	Leu	Leu	Asp	Glu	His	Gly	His	Val
145					150					155					160
His	Ile	Thr	Asp	Phe	Asn	Ile	Ala	Ala	Met	Leu	Pro	Arg	Glu	Thr	Gln
			165						170					175	
Ile	Thr	Thr	Met	Ala	Gly	Thr	Lys	Pro	Tyr	Met	Ala	Pro	Glu	Met	Phe
			180					185					190		
Ser	Ser	Arg	Lys	Gly	Ala	Gly	Tyr	Ser	Phe	Ala	Val	Asp	Trp	Trp	Ser
		195					200					205			
Leu	Gly	Val	Thr	Ala	Tyr	Glu	Leu	Leu	Arg	Gly	Arg	Arg	Pro	Tyr	His
	210					215				220					
Ile	Arg	Ser	Ser	Thr	Ser	Lys	Glu	Ile	Val	His	Thr	Phe	Glu	Thr	
225					230				235					240	
Thr	Val	Val	Thr	Tyr	Pro	Ser	Ala	Trp	Ser	Gln	Glu	Met	Val	Ser	Leu
			245						250					255	
Leu	Lys	Lys	Leu	Leu	Glu	Pro	Asn	Pro	Asp	Gln	Arg	Phe	Ser	Gln	Leu
			260					265					270		
Ser	Asp	Val	Gln	Asn	Phe	Pro	Tyr	Met	Asn	Asp	Ile	Asn	Trp	Asp	Ala
		275					280					285			
Val	Phe	Gln	Lys	Arg	Leu	Ile	Pro	Gly	Phe	Ile	Pro	Asn	Lys	Gly	Arg

290	295	300
Leu Asn Cys Asp Pro Thr Phe Glu Leu Glu Glu Met Ile Leu Glu Ser		
305	310	315
Lys Pro Leu His Lys Lys Lys Lys Arg Leu Ala Lys Lys Glu Lys Asp		320
	325	330
Met Arg Lys Cys Asp Ser Ser Gln Thr Cys Leu Leu Gln Glu His Leu		335
	340	345
Asp Ser Val Gln Lys Glu Phe Ile Ile Phe Asn Arg Glu Lys Val Asn		350
	355	360
Arg Asp Phe Asn Lys Arg Gln Pro Asn Leu Ala Leu Glu Gln Thr Lys		365
	370	375
Asp Pro Gln Gly Glu Asp Gly Gln Asn Asn Asn Leu		380
385	390	395

<210> 12  
 <211> 1675  
 <212> DNA  
 <213> homo sapiens

<400> 12

gagcgctaag	cggagacgcc	cgctggcaag	cagatcctgc	ctccttcctt	ggccaaggag	60
ccgcccctcc	ggggtagctg	tgcgctgggc	ggcgctcgga	ccccttggca	gccgcagggtg	120
cctccccagc	ccagcccagc	tcagtcacgc	gcagcccagc	ccagcccagc	ccggcgctcg	180
cagcctccgc	cgcttccggg	cagatagggtg	ccttttcttg	ctccttgctc	ttggagttct	240
tctcttagtc	cctgttccct	ggatgaaagc	atcgctccga	gcctcatggg	aggaatgaag	300
gaagaatcga	gactagatat	ccaactaagg	cttcgggaca	tgttttgagc	gaagatgggt	360
gtttctgccc	ggatagtata	aatcgaggat	ccaggctctg	gcagattcaa	ccatgggagc	420
caacacttca	agaaaaccac	cagtgtttga	tgaaaatgaa	gatgtcaact	ttgaccactt	480
tgaaattttg	cgagccattg	ggaaaggcag	ttttgggaag	gtctgcattg	tacagaagaa	540
tgataccaag	aagatgtacg	caatgaagta	catgaataaa	caaaagtgcg	tggagcgcaa	600
tgaagtgaga	aatgtcttca	aggaactcca	gatcatgcag	ggctctggagc	accctttcct	660
ggttaatttg	tggtattcct	tccaagatga	ggaagacatg	ttcatgggtg	tggacctcct	720
gctgggtgga	gacctgcgtt	atcacctgca	acagaacgtc	cacttcaagg	aagaaacagt	780
gaagctcttc	atctgtgagc	tggtcatggc	cctggactac	ctgcagaacc	agcgcacatc	840
tcacagggat	atgaagcctg	acaatatattt	acttgacgaa	catgggcacg	tgcacatcac	900
agattttcaac	attgctgcca	tgctgcccag	ggagacacag	attaccacca	tggctggcac	960
caagccttac	atggcacctg	agatgttcag	ctccagaaaa	ggagcaggct	attcctttgc	1020
tgttgactgg	tggtccctgg	gagtgcgggc	atatgaactg	ctgagaggcc	ggagaccgta	1080
tcataattcgc	tccagtactt	ccagcaagga	aattgtacac	acgtttgaga	cgactgttgt	1140
aacttaccct	tctgcctggg	cacaggaaat	gggtgcactt	cttaaaaagc	tactcgaacc	1200
taatccagac	caacgatttt	ctcagttatc	tgatgtccag	aacttcccgt	atatgaatga	1260
tataaactgg	gatgcagttt	ttcagaagag	gctcattcca	ggtttcattc	ctaataaagg	1320
caggctgaat	tgtgatccta	cctttgaact	tgaggaaatg	atthttggag	ccaaacctct	1380
acataagaaa	aaaaagcgct	tggcaaagaa	ggagaaggat	atgaggaaat	gcgattcttc	1440
tcagacatgt	cttcttcaag	agcaccttga	ctctgtccag	aaggagttca	taattttcaa	1500
cagagaaaaa	gtaaacaggg	actttaacaa	aagacaacca	aatctagcct	tgggaacaaac	1560
caaagaccca	caagtgacaa	atggacaaat	ggacacagga	ctcagtgaga	cttttccagac	1620
ctcgaaagtt	tcataaagtg	gtcagaatgc	cccaggctac	ttggataaag	ataag	1675